What is claimed is:

1. A copper alloy comprising:

2.0 to 4.0 mass% of Ti; and

0.01 to 0.50 mass% of at least one element selected from Fe, Co, Ni, Cr, V, Zr, B, and P as a third element group; wherein not less than 50% of the total content of the third element group exists as a second-phase particle.

2. A copper alloy comprising:

2.0 to 4.0 mass% of Ti;

0.01 to 0.50 mass% of at least one element selected from Fe, Co, Ni, Cr, V, Zr, B, and P as a third element group; and

a second-phase particle with not less than $0.01\mu m^2$ area observed by a cross section speculum;

wherein the rate of the number of second-phase particles in which the content of the third element group within the second-phase particles is not less than 10 times the content of the third element group within the alloy is not less than 70% of the total number of the second-phase particle.

3. A copper alloy comprising:

2.0 to 4.0 mass% of Ti;

0.01 to 0.50 mass% of at least one element selected from Fe, Co, Ni, Cr, V, Zr, B, and P as a third element group; and

a second-phase particle with not less than $0.01\ \mu m^2$ area observed by a cross section speculum;

wherein the second-phase particle has an area percentage Af of not

more than 1.0%.

4. A copper alloy comprising:

2.0 to 4.0 mass% of Ti;

0.01 to 0.50 mass% of at least one element selected from Fe, Co, Ni, Cr, V, Zr, B, and P as a third element group;

a second-phase particle with not less than 0.01 μm^2 area observed by a cross section speculum; and

an equable dispersion degree E defined by the following equation

$$E = \frac{\sqrt{\frac{1}{n}\sum_{i}^{n}\left(d_i - \sqrt{A_0/N_A}\right)^2}}{\sqrt{\frac{A_0}{N_A}}}$$

wherein d_i is the distance from the i-th second-phase particle to the nearest second-phase particle, A_o is the measured visual field area, and N_A is the number of the second-phase particle confirmed within the measured visual field area, wherein the equable dispersion degree E is not more than 0.8.

5. A copper alloy comprising:

2.0 to 4.0 mass% of Ti;

0.01 to 0.50 mass% of at least one element selected from Fe, Co, Ni, Cr, V, Zr, B, and P as a third element group;

an area percentage Af of a second-phase particle with not less than 0.01 μm^2 area observed by a cross section speculum, wherein the area percentage Af is not more than 1.0%;

a the second-phase particle with not less than 0.01μm^2 area observed by the cross section speculum; and

an equable dispersion degree E defined by the following equation

$$E = \frac{\sqrt{\frac{1}{n}\sum_{i}^{n}\left(d_i - \sqrt{A_0/N_A}\right)^2}}{\sqrt{\frac{A_0}{N_A}}}$$

wherein d_i is the distance from the i-th second-phase particle to the nearest second-phase particle, A_o is the measured visual field area, and N_A is the number of the second-phase particle confirmed within the measured visual field area, wherein the equable dispersion degree E is not more than 0.8.

6. The copper alloy according to claim 1, wherein the content of the Ti is 2.5 to 3.5 mass%.

7. A producing method for the copper alloy of claim 1 comprising the steps of:

producing an ingot in which 0.01 to 0.50 mass% of at least one element selected from Fe, Co, Ni, Cr, V, Zr, B, and P is added to Cu, and 2.0 to 4.0 mass% of Ti is added;

solution treating for heating the ingot up to ultimate temperature T℃, the ingot heated to temperature exceeding 600℃ at a heating rate of not less than 20℃/sec, and the ingot is then held for not less than 10 sec within a temperature range of T-100℃ to T℃, resulting in a supersaturated solid solution;

cold rolling by applying cold rolling with 5 to 50% of degree of processing from conditions of the supersaturated solid solution; and

aging treating for applying a thermal treatment to the rolled material at 350 to 450℃.